REMARKS

Applicant has carefully considered the May 16, 2005 Office Action, and the amendments above together with the comments that follow are presented in a bona fide effort to address all issues raised in that Action and thereby place this case in condition for allowance. Claims 1-9 are pending in this application. In response to the Office Action dated May 16, 2005, the title of the invention has been amended. Adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure as, for example, the depicted embodiments and related discussion thereof in the written description of the specification. Applicant submits that the present Amendment does not generate any new matter issue. Entry of the present Amendment is respectfully solicited. It is believed that this response places this case in condition for allowance. Hence, prompt favorable reconsideration of this case is solicited.

The Examiner objected to the title of the invention and required a new title that is clearly indicative of the claimed invention. Applicant respectfully requests reconsideration and withdrawal of the objection in view of the foregoing amendment to the title of the invention.

No additional amendments to the specifications are believed necessary at the present time.

Claims 1, 2 and 4-9 were rejected under 35 U.S.C. § 102(b) as being anticipated over Suppanz et al. (U.S. Pat. No. 6,014,013, hereinafter "Suppanz"). Applicant respectfully traverses.

Applicant would stress that the factual determination of lack of novelty under 35 U.S.C. § 102 requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed into the recognized possession of one having ordinary skill in the art. *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 66 USPQ2d 1801 (Fed. Cir. 2003); *Crown Operations International Ltd. v. Solutia Inc.*, 289 F.3d

1367, 62 USPQ2d 1917 (Fed. Cir. 2002). There are significant differences between the claimed invention and the apparatus and method disclosed by Suppanz that would preclude the factual determination that Suppanz identically describes the claimed inventions within the meaning of 35 U.S.C. § 102.

Claim 1 describes a battery pack malfunction detection apparatus for detecting a malfunction in a battery pack constituted by connecting in series a plurality of cells. The apparatus comprises detection terminals each connected to either of two terminals of one of the plurality of cells. Malfunction detection circuits are each provided in correspondence to one of the plurality of cells to detect a malfunction of a corresponding cell based upon a voltage between the detection terminals. A plurality of shorting circuits are included that short every other pair of detection terminals. Then apparatus further includes a control circuit that engages the shorting circuits in operation and a disconnection detection circuit that detects a disconnection at a connecting line between a given cell and a corresponding detection terminal based upon signals output from the malfunction detection circuits when the control circuit engages the shorting circuits in operation.

Independent claim 9 describes a method of detecting a malfunction of a battery pack constituted by connecting in series a plurality of cells. the method comprises the steps of shorting detection terminals alternately among detection terminals each provided in correspondence to either of two terminals of one of the plurality of cells; and detecting a disconnection of a connecting line between a cell and a corresponding detection terminal based upon signals output from malfunction detection circuits each provided to detect a malfunction of the corresponding cell based upon a voltage between the detection terminals when the detection terminals at alternate cells are shorted.

The battery pack malfunction detection apparatus of claim 1 includes a disconnection detection circuit that detects a disconnection at a connecting line between a given cell and a corresponding detection terminal based upon signals output from malfunction detection circuits when a plurality of shorting circuits short every other pair of detection terminals.

In contrast, Suppanz discloses a battery charge management system having a malfunction detection circuit for detecting the abnormal operating condition of the battery and a plurality of shorting/bypass and shunting circuits used to bypass the affected battery, as acknowledged by the Examiner. However, Suppanz does not disclose that the disconnection at the connecting line between a given cell and a corresponding detection terminal is detected by engaging the shorting circuits in operation. Namely, in Suppanz, the bypass circuit bypasses an abnormal cell after the abnormal cell is detected. As described at col. 2, lines 1-9, Suppanz discloses a system for managing the operation of a battery such as a lithium ion battery having a plurality of serially connected individual cells comprises a bypass module electrically in parallel with each individual cell or, alternatively, with at least one of the cells or alternatively again with an individual cell and its associated grouping of one or more parallel cells. Suppanz's module includes a sensor for detecting an operating condition of its associated cell and a charger operable for charging the cell. Suppanz further discloses that a charge controller is electrically connected with each bypass module and is operable in response to an operating condition of a cell detected by the sensor which is outside a predetermined range of magnitudes to change the bypass module to the conductive mode and thereby shunt current around the battery cell, while leaving unaffected each of the remaining cells.

With the present claimed subject matter, the shorting circuits short every other pair of detection terminals to detect the disconnection at the connecting line between a cell and a

corresponding detection terminal. Thus, Suppanz fails to identically disclose or suggest the disconnection detection circuit as defined in claim 1, or the step of detecting the disconnection of the connecting line, as required in claim 9.

Based upon the arguments submitted *supra*, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. § 102 is factually and legally erroneous. Applicant, therefore, solicits the Examiner to withdraw the rejection under 35 U.S.C. § 102.

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Suppanz. Applicant respectfully traverses. Applicant incorporates herein the arguments previously advanced in traversal of the rejection of claims 1, 2 and 4-9 under 35 U.S.C. § 102(b) predicated upon Suppanz. Claim 3 is free from the applied art in view of its dependency from independent claim 1. Accordingly, reconsideration and withdrawal of the rejection of claim 3 under 35 U.S.C. § 103(a) are requested.

It is believed that all pending claims are now in condition for allowance. Applicant therefore respectfully requests an early and favorable reconsideration and allowance of this application. If there are any outstanding issues which might be resolved by an interview or an Examiner's amendment, the Examiner is invited to call Applicant's representative at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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